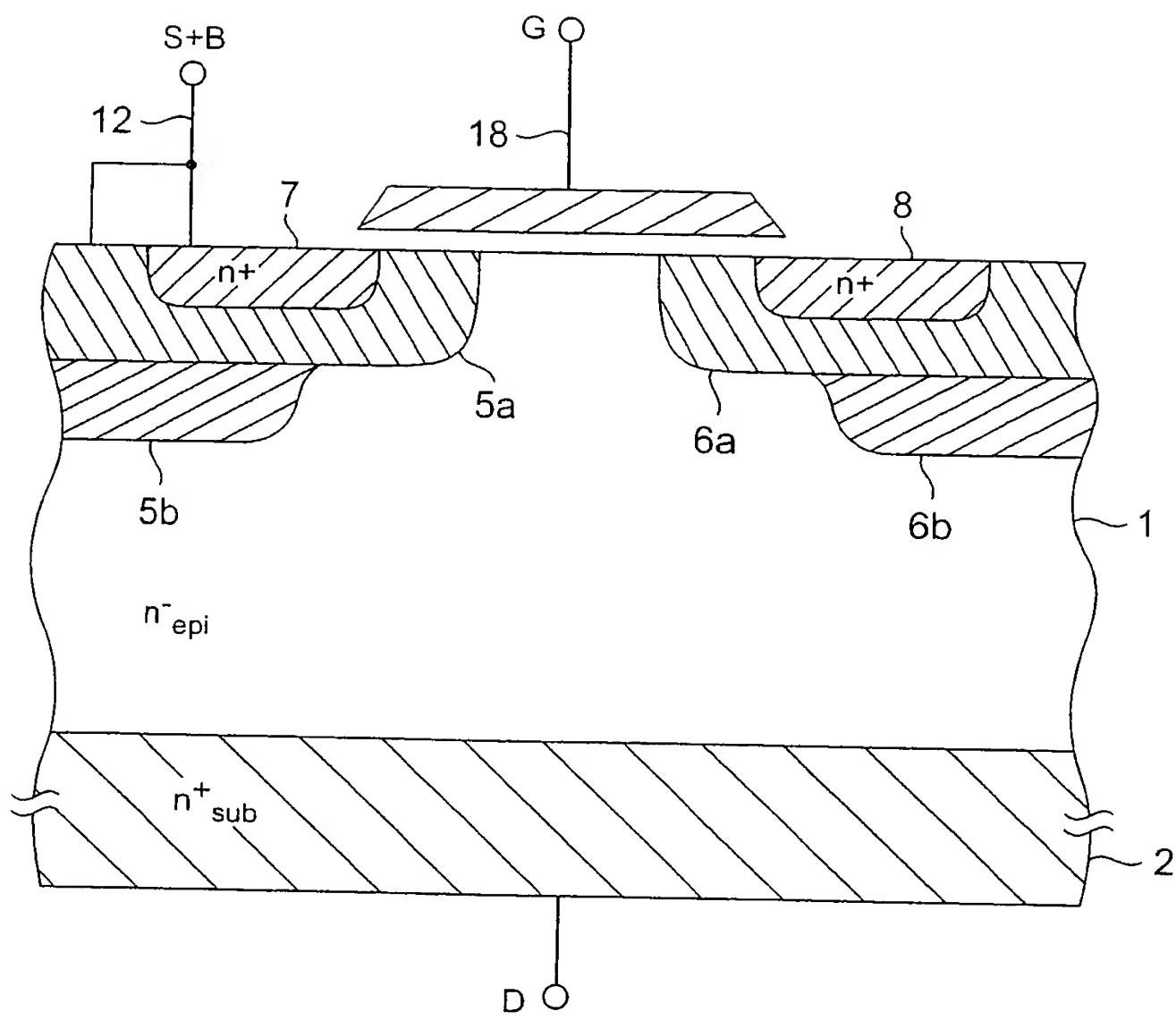




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CONVENTIONAL MOSFET

FIG. 1
(PRIOR ART)



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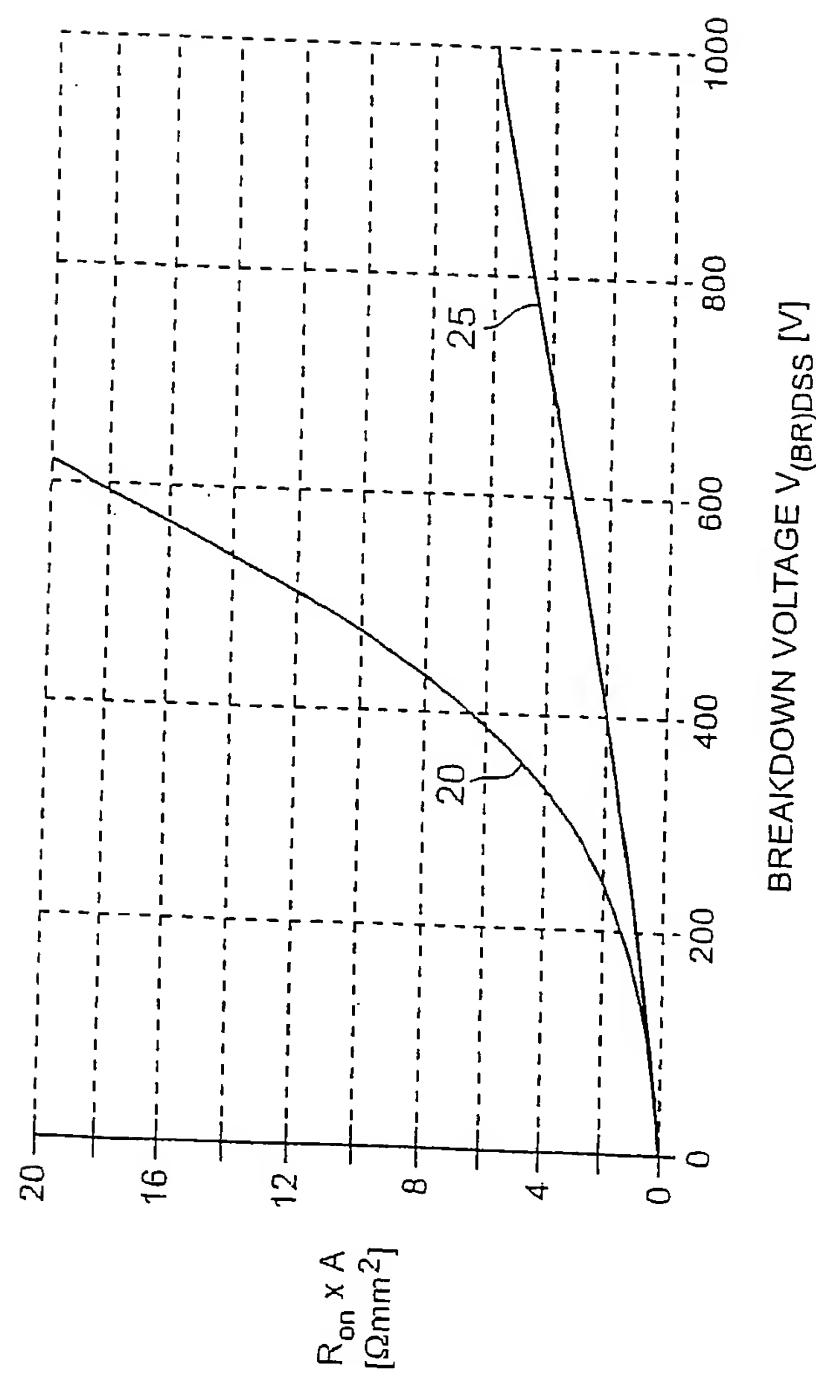
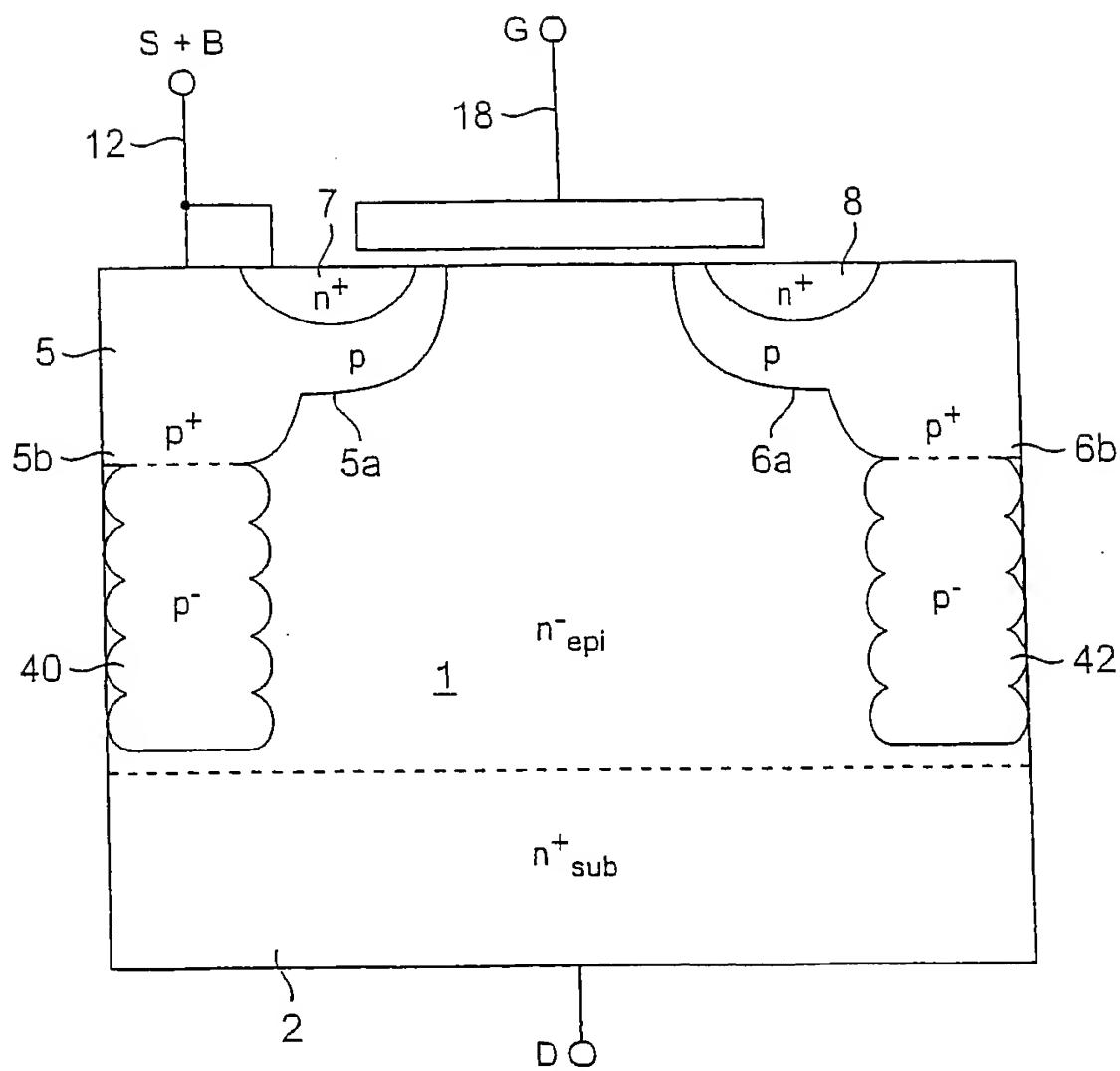


FIG. 2



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THE DOPANT DISTRIBUTION OF A HIGH VOLTAGE VERTICAL
DMOS TRANSISTOR WITH A RELATIVELY LOW ON-RESISTANCE

FIG. 3



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1. GROW/DEPOSIT A TRENCH ETCH-STEP LAYER
2. MASK AND ETCH THE TRENCH ETCH-STEP LAYER
3. ETCH THE TRENCH USING A GAS THAT CONTAINS THE DESIRED DOPANT SPECIES

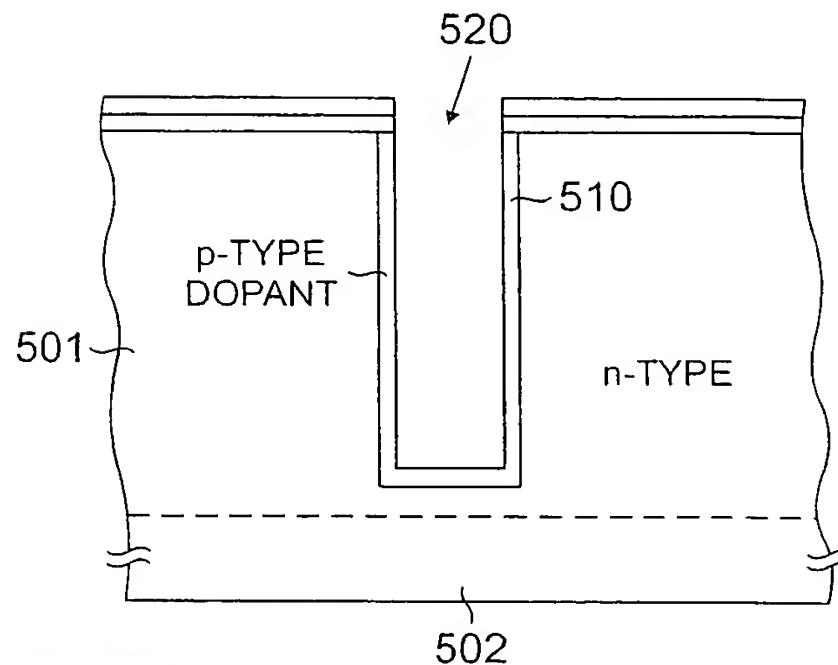


FIG. 4A

4. FILL THE TRENCH WITH A DIELECTRIC OR A HIGH RESISTIVITY LAYER
5. PLANARIZE
6. DIFFUSE THE DOPANT TO FORM THE DESIRED JUNCTION

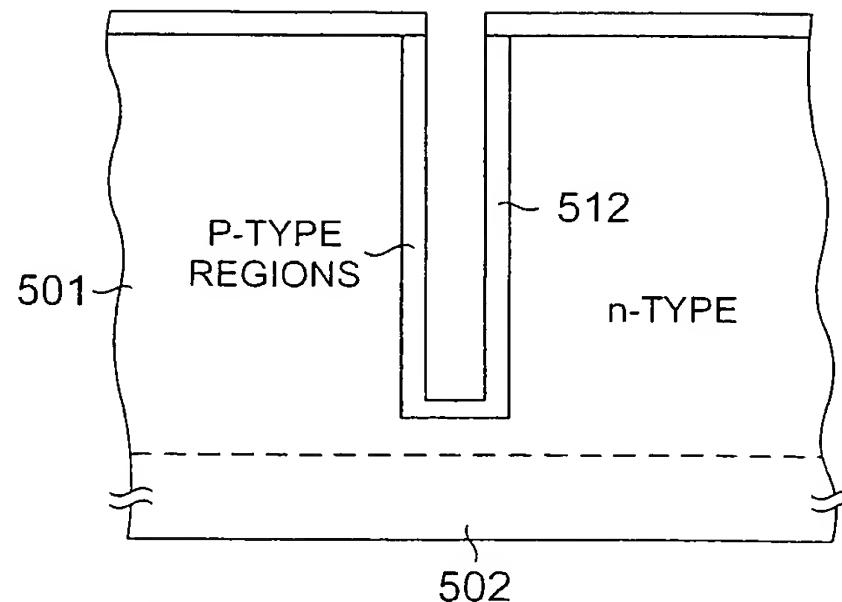
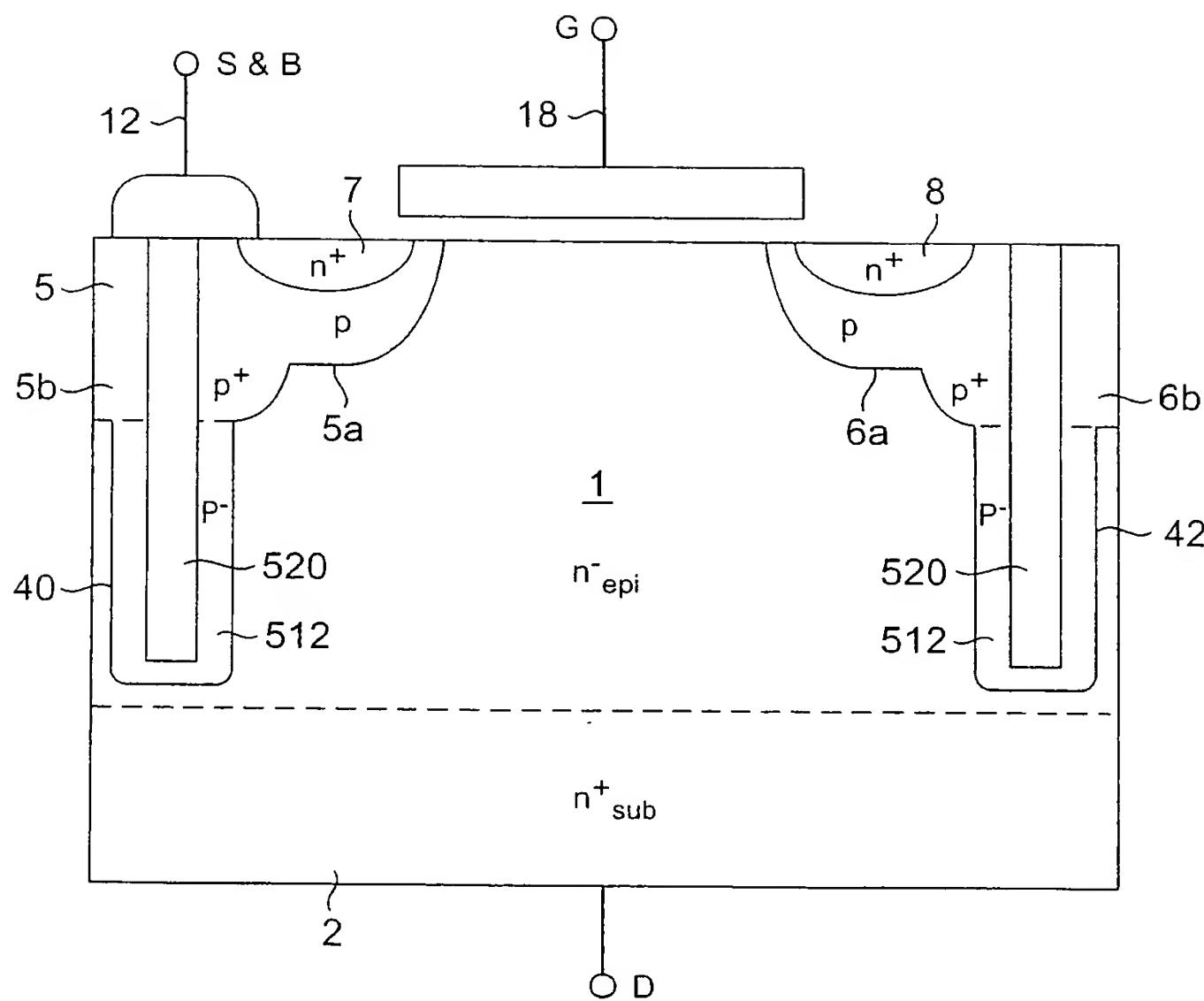


FIG. 4B



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THE DOPANT DISTRIBUTION OF A HIGH VOLTAGE VERTICAL
DMOS TRANSISTOR WITH A RELATIVELY LOW ON-RESISTANCE

FIG. 5